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TITLE : HAFNIUM COMPOUND CATALYST FOR ACYLATION AND PRODUCTION OF AROMATIC COMPOUND USING THE SAME

) ABSTRACT : PROBLEM TO BE SOLVED: To obtain the subject compound useful as a catalyst effective for a Fries rearrangement and a direct acylation reaction of phenols and naphthols.

SOLUTION: This catalyst comprises a compound of the formula $\text{Hf}(\text{OSO}_2\text{CF}_3)_4$. The catalyst is used for a Fries rearrangement of acyloxybenzenes or acyloxynaphthols and for a direct acylation reaction of phenols and naphthols with an acid halide or a carboxylic acid. The catalyst is prepared, for example, by mixing 8.61g of hafnium chloride with 22.1ml (250mmol) of trifluoromethanesulfonic acid, heating the mixture in an argon atmosphere at 50°C for 68 hours, distilling away excessive trifluoromethanesulfonic acid under reduced pressure to give a crude reaction product as residual powder and purifying the powder to give a white powder. The Fries rearrangement reaction and the direct acylation reaction is preferably carried out in the presence of both the catalyst and sodium perchlorate in an organic solvent (preferably a mixed solvent of toluene and nitromethane).

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